

Remarks

I. 35 USC 103

The Office Action rejects claims 1-12, 14-20 and 22-24 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,504,675 to Shukh et al. (Shukh). The Office Action states:

Note figures 1, 2, and 6. SHUKH et al shows a perpendicular magnetic recording head having a soft first magnetic return layer/pole (21) and a second magnetic write layer/pole 22 which is magnetically coupled to the return pole remote from the media (see figure 2). The second write pole has a trapezoidal shape. The head is used in a disk drive system with an actuator that moves the head between plural tracks (see figure 1). The perpendicular recording medium is shown in figure 2.

Applicants have amended claim 1 to include the limitation that “said second soft magnetic layer has a cross-sectional shape at a location at least one micron from said second pole tip that is substantially equal to said shape of said second pole tip.” This limitation is not taught or suggested in Shukh. Aside from a “conventional head for perpendicular recording on a bilayer media” shown in FIG. 2, Shukh does not indicate what shape a write pole of that invention has except for at the air bearing surface (ABS). In other words, Shukh does not teach that “said second soft magnetic layer has a cross-sectional shape at a location at least one micron from said second pole tip that is substantially equal to said shape of said second pole tip.”

As noted in the specification of the present application, it is possible to shape the write pole tip at the ABS by focused ion beam (FIB) etching of the media-facing surface, without reshaping the write pole layer away from the ABS (see paragraph 34). Shaping the pole layer during earlier processing is more difficult, as described in the specification in paragraphs 35-46 (corresponding to FIG. 9 – FIG. 18), but can result in the pole layer cross-sectional shape being substantially equal to the shape of the second pole tip. This has advantages in preventing side writing problems that might otherwise occur despite the shape of the write pole at the ABS that is disclosed by Shukh.

The Office Action notes that “SHUKH et al differs in not listing any dimensions for the head.” The Office Action states, however, that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the head of

SHUKH et al to have the listed dimensions. The motivation is as follows: these would have been the result of routine experimentation and optimization. One of ordinary skill in the art would routinely experiment and optimize where no dimensions were disclosed.”

Applicants respectfully disagree with the Office Action assertion that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the head of SHUKH et al to have the listed dimensions.” There is no depiction or description in Shukh of the shape of the write pole away from the ABS. Thus Shukh either did not recognize that merely shaping the write pole at the ABS may not be ideal, or Shukh was not able to shape the write pole away from the ABS, in either case demonstrating nonobviousness of the claims at issue. Moreover, Shukh does not indicate anywhere how to make the write pole claimed, so that Shukh is not enabled. Non-enabled inventions cannot be used as prior art in an obviousness rejection.

Applicants also respectfully disagree with the Office Action assertion that “the listed dimensions... would have been the result of routine experimentation and optimization.”

To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

W.L. Gore & Assocs., Inc. v. Garlock, Inc., 220 USPQ 303, 312–13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

In short, the Office Action does not state a prima facie case of rejection of claim 1, as amended.

Claims 2 and 4-8 are nonobvious over Shukh for at least the reasons given above with regard to claim 1.

Applicants have amended claim 9 to include the limitation that “said second soft magnetic layer has a cross-sectional shape at a location at least one micron from said second pole tip that is substantially equal to said shape of said second pole tip.” As discussed above regarding claim 1, this limitation is not taught or suggested in Shukh.

Claims 10 and 12-16 are nonobvious over Shukh for at least the reasons given above with regard to claim 9.

Similarly, claim 17 has been amended to include the limitation that "said second soft magnetic layer has a cross-sectional shape at a location at least one micron from said second pole tip that is substantially equal to said shape of said second pole tip." As discussed above regarding claim 1, this limitation is not taught or suggested in Shukh.

Claims 18-24 are nonobvious over Shukh for at least the reasons given above with regard to claim 17.

II. Conclusion

Applicants have responded to the Office Action by amending some of the claims and by showing that the Office Action has not presented a prima facie case of obviousness for any of the claims. As such, applicants respectfully assert that the application is in condition for allowance, and a notice of allowance is solicited.


A Petition for an Extension of Time to File a Response is included, along with the requisite fee.

Respectfully submitted,

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 19, 2003.

Date: 8-19-03



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